



George C. Marshall Space Flight Center  
Marshall Space Flight Center, Alabama 35812



Materials and Processes  
Laboratory, EM01

Metals Engineering  
Branch, EM30

EM30-WI-001  
02/11/2005

## ORGANIZATIONAL WORK INSTRUCTION

EM30

# EM30 CONTROL OF METALS ENGINEERING BRANCH WORK INSTRUCTIONS

<u>RELEASE AUTHORITY</u>	<u>NAME</u>	<u>TITLE</u>	<u>ORG</u>	<u>DATE</u>
Management Representative	_____ Timothy P. Vaughn	Branch Chief	EM30	02/11/2005

**CHECK THE MASTER LIST--ONLY THE LATEST REVISION IS VALID**

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Marshall Space Flight Center Organizational Work Instruction EM30		
EM30 Control of Metals Engineering Branch Work Instructions	Document: EM30-WI-001	Revision: Baseline
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## DOCUMENT HISTORY LOG

Revision	Date	Originator	Description
Baseline	2-11-2005	T. Vaughn	Document rebaselined due to reorganization of Departments and Laboratories at the Center

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## 1 SCOPE

- 1.1 **SCOPE:** This document shall provide document control procedures and requirements for the Materials and Processes Laboratory, Metals Engineering Branch's Organizational Work Instructions and forms within the scope defined by MPD 1280.1.
- 1.2 **PURPOSE:** This document shall establish the method for implementing the provisions of MPR 1410.1 relative to Organizational Work Instructions and forms within the Metals Engineering Branch and its component teams.
- 1.3 **APPLICABILITY:** This document shall apply to the Materials and Processes Laboratory, Metals Engineering Branch and its component teams.

## 2 APPLICABLE DOCUMENTS

- 2.1 **GEORGE C. MARSHALL SPACE FLIGHT CENTER (MSFC) POLICY DIRECTIVES AND WORK INSTRUCTIONS:**  
MPD 1280.1, "Marshall Management Manual"  
MPR 1410.1, "Document and Data Control for Organizational Issuances"
- 2.2 **NATIONAL AERONAUTICS AND SPACE ADMINISTRATION (NASA) POLICY DIRECTIVES AND WORK INSTRUCTIONS:**  
NPR 2810.1, "Security of Information Technology"

## 3 DEFINITIONS

- 3.1 **DEFINITIONS** shall apply as found in MPR 1410.1.
- 3.2 **OTHER**  
DCC document control custodian  
EM30 Metals Engineering Branch  
MLC master list custodian  
MPD Marshall Policy Directive  
MPR Marshall Procedures and Requirements  
NPR NASA Procedures and Requirements  
WI work instruction

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## 4 INSTRUCTIONS

- 4.1 **GENERAL:** Work instructions and forms shall be prepared to control the activities of the Metals Engineering Branch (EM30).
- 4.1.1 Work instructions and forms shall be created in compliance with MPR 1410.1.
- 4.1.2 A master list of all EM30 work instructions and forms shall be compiled by and include the name of the Document Control Custodian (DCC).
- 4.1.3 The DCC shall compile a quality records listing that includes all EM30 work instructions and forms, as well as quality records created or referenced by EM30 work instructions.
- 4.1.4 The quality records list shall include the following information:
- 4.1.4.1 Document type(s)
- 4.1.4.2 Document format(s)
- 4.1.4.3 Document custodian(s)
- 4.1.4.4 Physical location of the document(s)
- 4.1.4.5 Document retention time
- 4.2 **PREPARATION:** EM30 work instructions and forms shall be prepared by the office with primary responsibility for performing the activities that they describe.
- 4.3 **ORGANIZATIONAL WORK INSTRUCTION NUMBERING:** EM30 work instructions shall be identified by a unique name in the format EM30-WI-XXX, where XXX is a sequential number from 001 to 999. Each unique name shall consist of the following elements:
- 4.3.1 Branch: EM30
- 4.3.2 Work instruction: WI
- 4.3.3 Sequential number: 001 – 999
- 4.4 **FORMS NUMBERING:** EM30 forms shall be numbered in the format EM30-FORM-XX, where XX is a sequential number from 01 to 99. Each unique form shall be identified by the following elements:
- 4.4.1 Branch: EM30
- 4.4.2 Form: FORM
- 4.4.3 Sequential number: 01 – 99

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- 4.5 **REVIEW:** Before receiving approval for general release, new or revised EM30 work instructions and/or forms shall be reviewed for completeness and accuracy by:
- 4.5.1 Individual EM30 personnel whose duties they directly affect and
  - 4.5.2 The EM30 Branch Chief, Team Leader, or designee for the work area concerned.
- 4.6 **APPROVAL:** All new and/or revised work instructions and forms shall be approved by the EM30 Branch Chief or designee before general release.
- 4.6.1 The DCC shall provide the EM30 Branch Chief with a memorandum for record for signature. This document shall be used to authorize the release of new and/or revised documents and shall include the following information:
    - 4.6.1.1 EM30 work instruction and/or form identifying number
    - 4.6.1.2 EM30 work instruction and/or form title
    - 4.6.1.3 EM30 work instruction and/or form revision number
    - 4.6.1.4 Effective release date
    - 4.6.1.5 Location where the new and/or revised documents can be accessed
- 4.7 **RELEASE:** The DCC shall be responsible for the release of new and/or revised work instructions and/or forms on the EM30 website (<http://maptis.nasa.gov/em30/em30masterlist.html>).
- 4.7.1 The EM30 Branch Chief or designee shall provide the DCC with a copy of a signed memorandum for record (per section 4.6.1) authorizing the release of new and/or revised work instructions and/or forms.
  - 4.7.2 The DCC shall update the EM30 master list and quality records listing to include approved new or revised work instructions and/or forms.
  - 4.7.3 Digital versions of EM30 work instructions, forms, master lists, and quality record listings shall be made available to all Group personnel at the EM30 website (<http://maptis.nasa.gov/em30/em30masterlist.html>).
  - 4.7.4 The DCC shall generate electronic mail to notify EM30 personnel of the approved release of new or revised work instructions and/or forms.
  - 4.7.5 All current versions of EM30 work instructions shall be marked in the footer of each page as follows:

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4.7.6 All current versions of EM30 forms shall be marked in the footer of each page as follows:

#### **THE MASTER VERSION OF THIS FORM IS LOCATED AT**

<http://maptis.nasa.gov/em30/em30masterlist.html/>

File Name:(Unique\_File\_Name) Revision:(Revision\_Number) Date:(Revision\_Date)

4.8 **ANNUAL REVIEW:** The EM30 Branch Chief or designee shall be responsible for initiating an annual review of all Branch work instructions and forms.

4.8.1 The most recent review date for each EM30 work instruction and form shall be noted on the master list.

4.9 **REVISION:** All proposed changes to EM30 work instructions and/or forms shall be reviewed by the office with primary responsibility for performing the activities described therein and/or responsible EM30 personnel before being approved.

4.9.1 The EM30 Branch Chief or designee shall verify that all mandatory information is included in EM30 work instructions and forms.

4.9.2 Document revisions shall be identified by capital letters and proceed alphabetically from the letter A (e.g., A – Z).

4.9.3 The DCC shall create, edit, and distribute draft copies of new revisions of work instructions and forms.

4.9.4 Editorial comments shall be forwarded to the DCC by the office with primary responsibility for performing the activities described in the EM30 work instruction(s) or form(s), as well as by all EM30 personnel responsible for performing said activities.

4.10 **DISPOSITION OF OLD REVISIONS:** The DCC shall retain historical copies of previously issued EM30 work instructions and forms.

4.10.1 EM30 personnel with copies of work instructions since superseded by new revisions shall either:

4.10.1.1 Destroy the obsolete document, or

4.10.1.2 Retain and mark the obsolete document, as appropriate:

4.10.1.2.1 **FOR HISTORICAL USE ONLY**

4.10.1.2.2 **FOR LIMITED APPLICABILITY**

4.10.2 The rationale for using obsolete EM30 work instructions (in accordance with sections 4.10.1.1 and/or 4.10.1.2) shall be documented and approved by the EM30 Branch Chief or designee.

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4.10.3 Obsolete EM30 work instructions retained and marked in accordance with sections 4.10.1.1 and/or 4.10.1.2 shall be tracked on the EM30 master list for audit purposes.

4.10.4 Printed copies of obsolete EM30 forms shall be destroyed and replaced with the current version as soon as possible.

## 5 NOTES

5.1 **THE SAME PERSON** shall serve as both Master List Custodian (MLC) and DCC.

5.2 **OFFICIAL VERSIONS** of EM30 work instructions and forms shall be maintained on the EM30 website (<http://maptis.nasa.gov/em30/em30masterlist.html>). No separate distribution shall be made.

## 6 SAFETY PRECAUTIONS AND WARNING NOTES

6.1 **NOT APPLICABLE.**

## 7 APPENDICES, DATA, REPORTS, AND FORMS

7.1 **NONE.**

## 8 QUALITY RECORDS

8.1 **OBSOLETE** work instructions, forms, master lists, and quality record listings shall be permanently maintained on the EM30 file server.

8.2 **BACKUP COPIES** obsolete EM30 work instructions, forms, master lists, and quality record listings shall be kept in accordance with NPR 2810.1.

8.2.1 The DCC or a designated backup administrator shall back up data to a file server separate from the one used to store primary data for EM30 work instructions, forms, master lists, and quality record listings.

8.2.2 A complete backup of all EM30 file server data shall be compiled on magnetic tape semi-annually and maintained for a minimum of 2 years.

8.2.3 The backup server and tapes shall be located in a secure area controlled by keycard access.

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8.3 **EM30 WORK INSTRUCTIONS AND FORMS** generated using this document include:

EM30-WI-001, “EM30 Control of Metals Engineering Branch Work Instructions”

EM30-WI-002, “EM30 Work Tracking, Product Traceability and Control, and Data Control”

EM30-WI-003, “Materials and Failure Analysis”

EM30-WI-004, “Stress Corrosion Test Procedure”

EM30-WI-005, “Weld Development Work Procedures”

EM30-WI-006, “Thermal Spray Facility Work Procedures”

EM30-WI-007, “Plating Procedures”

EM30-WI-008, “Processes Development Calibration and Verification Procedures”

EM30-WI-009, “Temperature Controller Verification Procedure for Plating Facility”

EM30-WI-010, “Micrometer & Caliper Verification Procedure”

EM30-ML, “Master List of Metals Engineering Branch Work Instructions”

EM30-QRL, “Quality Records Listing for the Metals Engineering Branch”

EM30-FORM-01, “EM30 Welding Work Request Form”

EM30-FORM-02, “EM30 Thermal Spray Facility Work Request Form”

EM30-FORM-03, “EM30 Temperature Controller & Thermister Probe Logsheet”

EM30-FORM-04, “Micrometer and Caliper Verification Logsheet”

8.4 **ALL SCHEDULES** pertaining to the retention and disposition of EM30 Quality Records shall be compiled in the Quality Records Listing located on the master list of the Organizations website (<http://maptis.nasa.gov/em30/em30masterlist.html>)

## 9 TOOLS, EQUIPMENT, AND MATERIALS

9.1 **NOT APPLICABLE.**

## 10 PERSONNEL TRAINING AND CERTIFICATION

10.1 **NOT APPLICABLE.**

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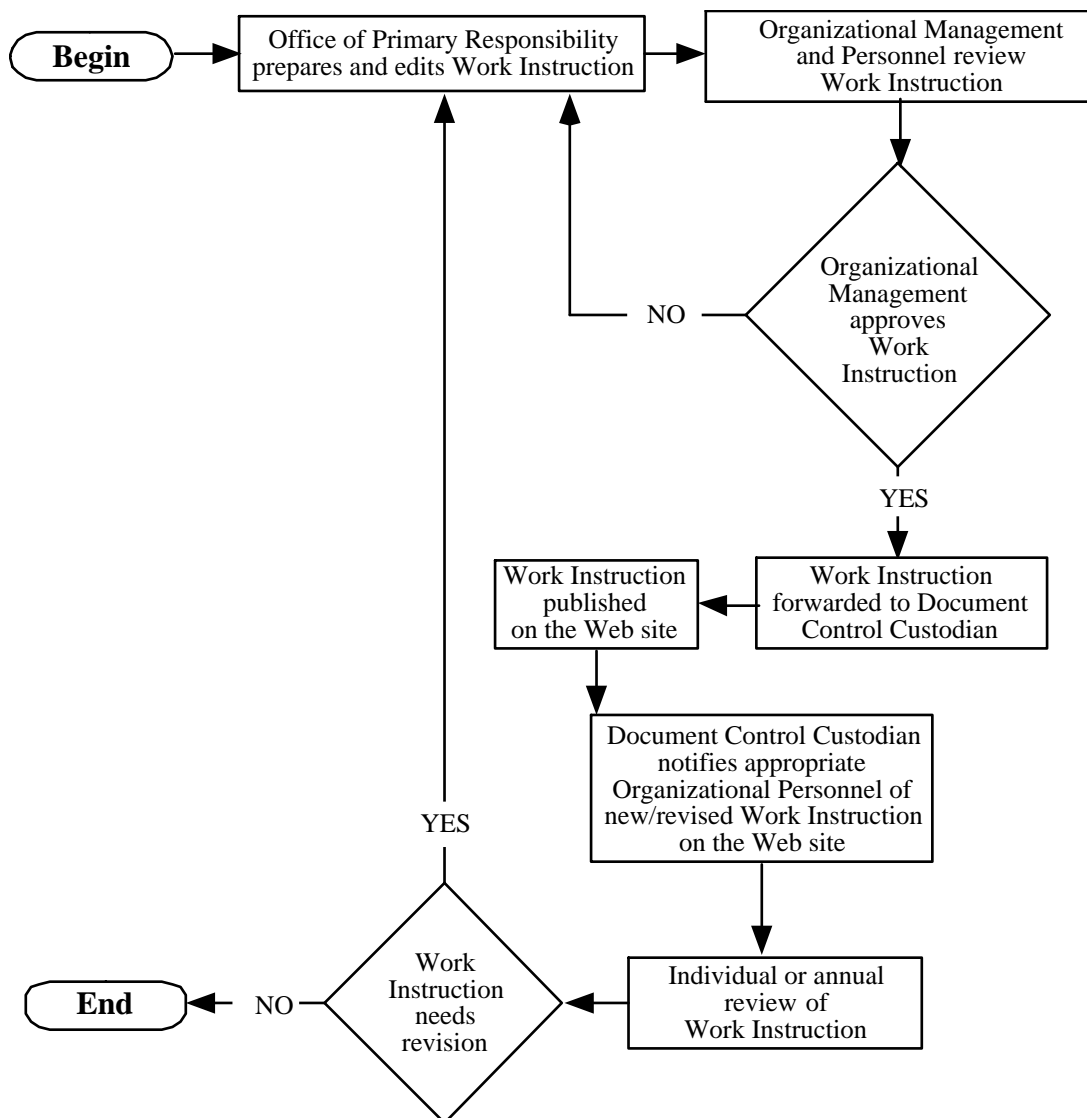
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## 11 FLOW DIAGRAM



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